

AMENDMENTS TO THE SPECIFICATION

Please add the following after paragraph on page 9, line 3.

In accordance with a further aspect, the present invention also provides a method for treating tungsten carbide particles, comprising the steps of:

a) providing a starting material containing cast eutectic tungsten carbide particles of a given hardness having a particle size ranging from 1 μm and 5 mm and comprising WC and W_2C , the tungsten carbide particles being of a W-C system whose compositions, microstructures and phase distribution are represented on an equilibrium temperature-composition binary phase diagram plotting temperature against relative concentrations of W and C, the binary phase diagram of the W-C system showing a monophasic domain of a γ solid phase corresponding to WC_{1-x} having a face-centered cubic structure;

b) subjecting the starting material to a homogenization heat treatment in the monophasic domain, thereby obtaining WC_{1-x} monophased particles having a face-centered cubic structure;
and

c) subsequently to the homogenization treatment of step b), subjecting the tungsten carbide particles to a quenching step to freeze at ambient temperature at least a portion of the face-centered cubic structure and refine grain size of the microstructure, thereby obtaining a final product at ambient temperature containing particles with a finer microstructure than the starting material, a particle size similar to the particle size of the starting material, a composition comprising at least a portion of face-centered cubic WC_{1-x} structure and a hardness greater than the hardness of the starting material.

According to a still further aspect, the present invention provides a method for treating tungsten carbide particles, comprising the steps of:

a) providing a starting material containing cast eutectic tungsten carbide particles having a particle size ranging from 1 μm and 5 mm and comprising WC and W_2C ;

b) subjecting the starting material to a homogenization heat treatment at a temperature between 2535°C and 2720°C and obtaining WC_{1-x} monophased solid particles having a face-centered cubic structure;

and

c) subsequently to the homogenization of step b), subjecting the tungsten carbide particles to a quenching treatment to freeze at ambient temperature at least a portion of the of the face-centered cubic structure and to refine the microstructure, thereby obtaining a final product at ambient temperature containing particles having a finer microstructure than the starting material, a particle size similar to the particle size of the starting material, and a composition comprising at least a portion of cubic face-centered WC_{1-x} .